



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,430	02/13/2004	Khaled Sedky	14917.0523US01	8758
27488	7590	01/03/2008	EXAMINER	
MERCHANT & GOULD (MICROSOFT) P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903				RUDOLPH, VINCENT M
ART UNIT		PAPER NUMBER		
2625				
MAIL DATE		DELIVERY MODE		
01/03/2008				PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

)

Office Action Summary	Application No.	Applicant(s)
	10/779,430	SEDKY ET AL.
	Examiner	Art Unit
	Vincent M. Rudolph	2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 13 February 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-28 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-28 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 13 February 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 6-7, 11, 16-17, 21 and 25-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsueda ('243).

Regarding claim 1, Matsueda ('243) discloses a system for printing data on a printer (See Figure 3) that includes **a**) one or more clients (See Figure 1, Element 12, 14 and 15) that include applications programs having a print capability (issuing a print request, See Col. 4, Line 20-22), **b**) a server (See Figure 1, Element 16) that implements a server print spooler for coordinating the printing of data communicated to the server by one of the clients (stores print data from the respective clients, See Col. 4, Line 43-45), **c**) one or more printers (See Figure 1, Element 18, or plural printers, See Col. 4, Line 55-56) coupled to the server (over the network, See Figure 1, Element 11) for printing under the

direction of the server print spooler (transmit print data to the printer once permission is granted, See Col. 4, Line 55-62) wherein d) a client includes a client print spooler (See Col. 5, Line 24) running that communicates with one of the printers by asynchronous remote procedure calls to the server print spooler (communicates the print job to the printer once it is turn to perform printing after acknowledging the response sent from the server, See Col. 5, Line 51-59, wherein both have an image spooler, See Col. 2, Line 12-15).

Regarding claim 3, Matsueda ('243) discloses that the server spooler implements a completion port wherein incoming print requests are added to the completion port (determines if the received command is a print request, See Col. 6, Line 50-55, such that if it is a print request, it determines it can be accepted, See Col. 7, Line 28-31).

Regarding claim 6, Matsueda ('243) discloses that the client print spooler implements certain procedures asynchronously (communicate the print job to the printer once it is turn to perform printing after acknowledging the response sent from the server, See Col. 5, Line 51-59) and some of the procedures are implemented in a synchronous manner (polling the printer to be informed of the completion of the print operation, See Col. 6, Line 5-8).

Regarding claim 7, Matsueda ('243) discloses that the clients send data to the server print spooler in multiple asynchronous requests until an entire print job is completed (client transmits a print request to the server, See Col. 5, Line 25-26, then sends the print data after it receives and sends a permission acknowledgement response, See Col. 5, Line 51-59, and finally returns a

acknowledgment response after the print data has been outputted, See Col. 5, Line 60-67).

Regarding claim 11, Matsueda ('243) discloses a method of printing data originating from a plurality of client from a plurality of printers (See Figure 1, using one or plural printers, See Col. 4, Line 55-56, for printing data, See Col. 4, Line 20-22) that includes **a**) providing a print spooler interface for an application to communicate with a client which in turns communicates with a print server (the client interacts with a printer driver to convert the data as well as spool it into the print spooler, which then it outputted to the server spooler, See Col. 5, Line 10-24), the print spooler interface enabling the application to call a service routine on the print server by means of an asynchronous remote procedure call originating with the application (communicates the print job to the printer once it is turn to perform printing after acknowledging the response sent from the server, See Col. 5, Line 51-59), and **b**) implementing a scheduler on the print server computer that responds to the request from the client for print services by allocating print server run time amongst print requests sent to the server by the computer application (server determines if the print request received is print request information, See Col. 6, Line 50-55, and proceeds to respond to the request, See Figure 4, in order to perform tasks such as job scheduling for the next printing job and wait for a response from the client, See Col. 7, Line 3-12).

Regarding claim 16, Matsueda ('243) discloses that the client print spooler implements certain procedures asynchronously (communicate the print job to the printer once it is turn to perform printing after acknowledging the response sent

from the server, See Col. 5, Line 51-59) and some of the procedures are implemented in a synchronous manner (polling the printer to be informed of the completion of the print operation, See Col. 6, Line 5-8).

Regarding claim 17, Matsueda ('243) discloses that the client request a print job made up of multiple print requests that are sequentially communicated to the print server computer in multiple asynchronous remote procedure calls (client transmits a print request to the server, See Col. 5, Line 25-26, then sends the print data after it receives and sends a permission acknowledgement response, See Col. 5, Line 51-59, and finally returns an acknowledgment response after the print data has been outputted, See Col. 5, Line 60-67).

Regarding claims 21, and 25-26, the rationale provided in the rejection of claims 11 and 16-17 are incorporated herein. In addition, the method of claims 11 and 16-17 corresponds to the computer readable medium (See Col. 8, Line 44-50) of claims 21 and 25-26 and performs the steps disclosed herein.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 4-5, 8-10, 12-15, 18-20, 22-24 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsueda ('243) in view of Savov ('462).

Regarding claim 2, Matsueda ('243) does not disclose that the server spooler includes a thread manager for maintaining a thread pool for servicing pending client print requests by communicating data to the plurality of printers.

Savov ('462) discloses a server (See Figure 2, Element 202) that includes a thread manager for maintaining a thread pool (See Col. 4, Line 47-54) for servicing pending client print requests (See Col. 3, Line 30-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to include a thread manager, such as the one disclosed within Savov ('462), and incorporate it into Matsueda ('243) because it is able to provide a high availability server as well as lower the request-processing times (See Savov ('462), Col. 3, Line 45-49).

Regarding claim 4, Matsueda ('243) discloses that the server print spooler maintains a list of print requests awaiting servicing (performs job scheduling for the next printing job in line, See Col. 7, Line 4-9).

Matsueda ('243) does not disclose that the print requests are added to a thread pool that shares processor time of the server.

Savov ('462) discloses a scheduler that operates on a thread pool, in which the scheduler decides how the processor time is apportioned (See Col. 4, Line 47-54) and sharing data with the clients (See Col. 5, Line 20-23).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to include a thread pool, such as the one disclosed within Savov ('462), and incorporate it into Matsueda ('243) because it allows a server to respond to multiple requests and fulfill the requests efficiently.

Regarding claim 5, Matsueda ('243) does not disclose multiple thread pools are created to service the print request and each thread pool is serviced by a single processor thread.

Savov ('462) discloses multiple pools of threads in order to receiving incoming requests and to process the received requests (See Col. 3, Line 33-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to include multiple pool threads, such as the one disclosed within Savov ('462), and incorporate it into Matsueda ('243) because it allows the server to acknowledge requests more quickly (See Savov ('462), Col. 3, Line 33-34).

Regarding claim 8, Matsueda ('243) does not disclose a scheduler for sending print requests to a thread pool for processing.

Savov ('462) discloses a scheduler (See Figure 1, Element 102) for operating on a thread pool (See Col. 4, Line 47-54).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to include a scheduler, such as the one within Savov ('462), and incorporate into Matsueda ('243) because it allows multiple operations to proceed at the same time.

Regarding claim 9, Matsueda ('243) does not disclose that the scheduler chooses print requests from a first processing thread and adds to a second processing thread pool.

Savov ('462) discloses that the server includes a scheduler (See Col. 5, Line 10-11) for choosing print requests from one pool thread and add it to

another pool thread (move the print job from a thread for incoming requests and place it in processing request thread, See Col. 3, Line 34-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to include placing a print request from one thread pool and place it in another, such as the one disclosed within Savov ('462), and incorporate it into Matsueda ('243) because it allows to lower the request-processing times within the server (See Savov ('462), Col. 3, Line 45-49).

Regarding claim 10, Matsueda ('243) does not disclose sending raw data to the thread pool in an overlapped manner.

Savov ('462) discloses sending a multiple requests to the thread pool at once in order to process them (See Col. 3, Line 25-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to include sending data to the thread pool, such as the one disclosed within Savov ('462), and incorporate it into Matsueda ('243) because it allows multiple operations to proceed at the same time.

Regarding claim 12, Matsueda ('243) does not disclose having the scheduler implement one or more thread pools to service print requests from multiple computer applications.

Savov ('462) discloses having the scheduler implement one or more thread pools (See Col. 4, Line 49-54) in order to service incoming requests (See Col. 3, Line 33-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to include servicing print requests, such as the one

disclosed within Savov ('462), and incorporate it into Matsueda ('243) because it allows the server to acknowledge requests quickly (See Savov ('462), Col. 3, Line 33-34) and fulfill the requests efficiently.

Regarding claim 13, Matsueda ('243) does not disclose that the thread pools are implemented by a completion port wherein incoming print requests from the client computers are added to the completion port.

Savov ('462) discloses multiple pools of threads are implemented by a server for incoming requests (See Col. 3, Line 33-36) from communicating with the client computers (See Col. 5, Line 17-19).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to include multiple pool threads, such as the one disclosed within Savov ('462), and incorporate it into Matsueda ('243) because it allows multiple operations to proceed at the same time.

Regarding claim 20, Matsueda ('243) discloses a client / server computing system (See Figure 1) for implementing a server print spooler (stores print data from the respective clients, See Col. 4, Line 43-45) that includes **a**) receiving asynchronous client print requests by means of a communications channel that conveys print requests to a server print spooler (transferring a print request to the server, See Col. 5, Line 25-26), **b**) placing the client print request into a queue of such print requests (placing the job in a predetermined order, See Col. 5, Line 46-50), and **c**) scheduling print output from the print from a subset of print requests at a selected print location (schedule the print job, See Col. 7, Line 4-9, from the multiple print requests at the selected printer, See Col. 5, Line 46-50).

Matsueda ('243) does not disclose place the subset of print request (the selected print request) in a thread pool serviced by the processor thread that switches between servicing the print requests in the thread pool.

Savov ('462) discloses placing the selected request in a thread pool (See Figure 1; Col. 4, Line 45-54) serviced by a processor thread (embedded within the server) that switches between servicing the print requests in the thread pool (switches between placing the request from an incoming request thread pool area to a processing thread pool area, See Col. 3, Line 30-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to include a thread pool, such as the one disclosed within Savov ('462), and incorporate it into Matsueda ('243) because it allows the server to guarantee availability for fulfilling and processing the incoming requests.

Regarding claims 14-15, 18-19, 22-24 and 27-28, the rationale provided in the rejection of claims 4-5, 8-9 and 13 are incorporated herein. In addition, the system of claims 45 and 8-9 corresponds to the method of claims 14-15, 18-19 and the computer readable medium (See Col. 8, Line 44-50) of claims 23-24 and 27-28 as well as the method of claim 13 corresponds to the computer readable medium of claim 22 and performs the steps disclosed herein.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is: Wanda ('064) and Hertling ('034).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent M. Rudolph whose telephone number is (571) 272-8243. The examiner can normally be reached on Monday through Friday 8 A.M. - 4:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571) 272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

12/14/07

VMR

Vincent M. Rudolph
Examiner
Art Unit 2625


AUNG S. MOE
SUPERVISORY PATENT EXAMINER

12/20/07